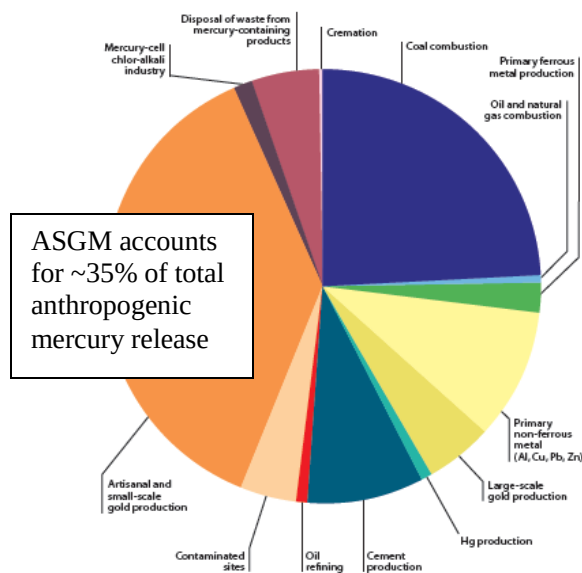


Fact Sheet: Mercury Use in Artisanal and Small Scale Gold Mining (ASGM)

Mercury is a metal that presents a health risk particularly for children, pregnant women and women who are nursing. Commonly used in artisanal and small-scale gold mining, mercury represents a significant health and environmental threat not only locally to miners and their communities but also globally because mercury emissions can travel in the atmosphere around the earth, far from its original source. Mercury is a highly toxic pollutant that can damage the brain and nervous system. Once deposited, mercury travels up the food chain, concentrating in the fish that we eat as well as in birds and marine mammals. Around the world, mercury levels in many important species of fish have risen to the point of being unsafe for those who rely on fish as a regular part of their diet.

Focus: Artisanal and Small-Scale Gold Mining (ASGM)

For most developing countries, ASGM is the largest source of mercury pollution. In fact, according to UNEP's most recent Global Mercury Assessment, ASGM is currently the largest source of mercury pollution in the world.



Relative contributions to estimated emissions to air from anthropogenic sources in 2010.

Basics of ASGM

ASGM refers to gold mining conducted by individual miners or small enterprises with limited capital investment and production. Due to the rise of gold prices over the last decade, the ASGM sector now provides the main source of income for 10 to 20 million miners in over 70 countries, primarily developing countries. The secondary economy surrounding ASGM supports 50 to 100 million people around the globe. The World Bank and other agencies consider ASGM to be a potential source of economic development and poverty relief: mining incomes are often 2-4 times higher than incomes from typical agricultural activities in the same region. Even if the gold price were to drop by 25%, ASGM will remain an attractive activity for the rural poor.

Mercury in ASGM

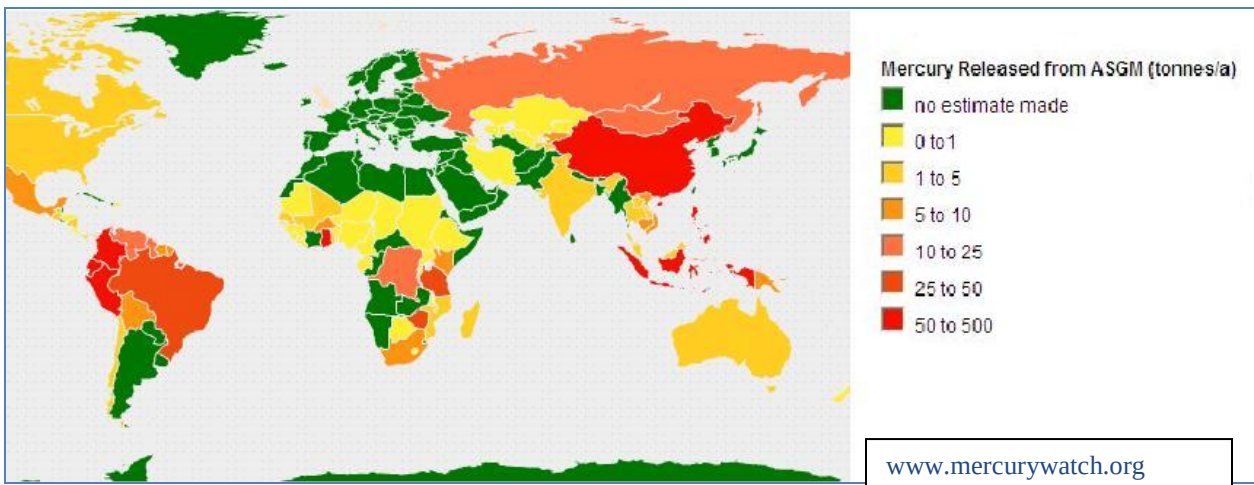
Mercury is used in ASGM to concentrate gold by forming a mercury-gold amalgam, which is then heated to drive off the mercury into the atmosphere, leaving only the gold. This process is favored by small-scale miners over other methods of gold extraction because it is inexpensive, accessible, simple to use, and allows miners to produce gold quickly, often in a single day.



Lao miner using Hg in the Mekong River (Veiga, 2010)

Mercury releases in ASGM

Nearly all of the mercury used in ASGM is eventually released directly into the environment. Those who burn the gold-mercury amalgam and whoever is nearby are exposed to mercury vapors released into the air through inhalation. Mercury-contaminated tailings are released to soils and waters. This mercury pollutes the atmosphere, soils and waterways, exposing miners and their communities to serious health risks. Mercury released into air can also travel long distances, reaching lakes, streams, and soils all around the world.



Technical Solutions

Technical solutions already exist that could dramatically lower the use and release of mercury in ASGM, and in numerous cases, eliminate the need for mercury all together. These technologies include better pre-concentration of gold prior to amalgamation decreasing the amount of mercury needed; capture, re-activation, and re-use of mercury; and mercury-free gravity separation technologies. Some researchers have estimated that if all of these techniques were applied together, they would reduce global use of mercury in ASGM as much as 90%. Examples of technical solutions are described in the UNEP Technical Guidance Document:

http://www.unep.org/hazardoussubstances/Portals/9/Mercury/Documents/ASGM/Techdoc/UNEP%20Tech%20Doc%20APRIL%202012_120619%20with%20links_web.pdf

What does the Minamata Convention require regarding ASGM?

The Minamata Convention on Mercury, an international agreement adopted in 2013 and signed by nearly 100 countries (but not yet in force), addresses mercury use in ASGM among other forms of mercury pollution. The Convention does not require a ban of mercury use in ASGM, although restrictions on the supply and trade of mercury will likely make it more expensive and difficult to acquire. Rather, Article 7 of the Minamata Convention requires that countries with ASGM using mercury in their territory take steps to reduce and where feasible eliminate the use of mercury in ASGM. Countries where mercury use in ASGM is more than insignificant must also submit a National Action Plan that describes how they will achieve mercury reductions. The annex of the Convention guides countries on creating their National Action



Mercury-free processing in Philippines

Plans. Among other requirements, countries must identify and take actions to eliminate some of the worst practices associated with ASGM, including whole ore amalgamation (an intensive use of mercury causing some of the worst pollution). Countries must also take steps to facilitate regulation of the ASGM sector into the formal economy.

Trade restrictions

ASGM is considered an “allowable use” under the Convention, which means that mercury can be imported and exported for use in this sector. However, there will be restrictions on this trade. Exporting countries must notify and receive consent from importing countries. Further, mercury from primary mining and legacy mercury from the chlorine manufacturing sector (large sources of mercury supply) cannot be used for ASGM.

Requirements for the ASGM National Action Plans

- Establish baseline estimates of mercury use for future comparison
- Identify actions to eliminate worst practices (open burning, whole ore amalgamation, use of cyanide after mercury)
- Facilitate formalization
- Develop a public health strategy
- Develop and implement strategies to
 - Reduce emissions
 - Prevent the diversion of mercury intended for other uses to ASGM
 - Promote education and information sharing
 - Protect vulnerable populations
 - Involve stakeholders in plan development

What can the international community do to help countries meet their new obligations and reduce mercury use in ASGM?

The international community can help to address the challenge of reducing, or where possible, eliminating the use of mercury in ASGM through education programs, financial mechanisms for investment in better technologies, and support to government to create enabling policies to support the miners' participation in the formal economy.

The UNEP Global Mercury Partnership

Even before the Convention was negotiated, international efforts have been underway to provide guidance and tools, and to facilitate funding of projects to reduce mercury use in ASGM, including through the United Nations Environment Programme (UNEP) Global Mercury Partnership. Further, a number of bilateral

and multilateral-funded projects have been undertaken to address a wide array of social, economic and environmental dimensions of the ASGM sector. These efforts represent a body of existing global experience that can be drawn upon to help countries devise strategies to comply with their obligations under the Minamata Convention.

The U.S. Department of State currently has a global Mercury Program with a strong emphasis on ASGM projects. See <http://www.state.gov/e/oes/eqt/chemicalpollution/mercury/index.htm>

Resources:

Overview of country-by-country mercury inventories : www.mercurywatch.org

UNEP Global Mercury Partnership on ASGM:

www.unep.org/hazardoussubstances/Mercury/InterimActivities/Partnerships/ArtisanalandSmallScaleGoldMining/tabid/3526/language/en-US/Default.aspx

Technical Guidance Document:

http://www.unep.org/hazardoussubstances/Portals/9/Mercury/Documents/ASGM/Techdoc/UNEP%20Tech%20Doc%20APRIL%202012_120619%20with%20links_web.pdf

Formalization report:

<http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/ArtisanalandSmallScaleGoldMining/FormalizationoftheASGMSector/tabid/79426/Default.aspx>

Global Mercury Project: www.globalmercuryproject.org